## REMARKS

**Status of Claims**

As of this amendment, Claims 1-9, 20, 22-27, 29-55 are pending in the instant application, and of these, Claims 2, 20, 26 and 27 are currently being amended and Claims 31-55 are being added. Claims 21 and 28 are being cancelled.

The amendments to claims 2, 20 and 26 are fully supported by the Specification, Claims as originally filed, and Drawings. For example, the amendment to Claim 2 is to provide correct antecedent basis for "electrolyte". The amendments to Claims 20, 26 and 27 are supported by paragraphs 16-17, 22-24 of the Specification and by Figures 2-4 of the Drawings. Thus, no new matter has been added. Entry of the amendments is respectfully requested.

New claims 31-55 are also fully supported by the Specification, Claims as originally filed, and Drawings. For example, new Claims 31-37 are supported by original Claims 1, 4-5 and 7-8, paragraphs 19 and 23-25 of the Specification, as well as Figure 3 of the Drawings. New Claims 38-48 are supported by original claims 1, 4-5 and 7-8, paragraphs 17, 20 and 24-25 of the Specification, and Figure 2 of the Drawings. New Claims 49-55 are supported by original Claims 1, 4-5 and 7-8, paragraphs17, 20-21 and 24-25 of the Specification, and Figure 2 of the Drawings. Thus, no new matter has been added. Entry of the new claims is respectfully requested.

**Rejection of Claims 20, 22, 26 and 27 under 35 USC 102(b)**

The Examiner rejected Claims 20, 22, 26 and 27 under 35 USC 102(b) as being anticipated by U.S. Patent No. 5,670,272 to Cheu et al.

Claim 20

Claim 20 is not anticipated by Cheu et al. because Cheu et al. does not teach, "[a] thin film battery comprising: a substrate comprising a dielectric material; a

cathode layer having a surface adhering to the substrate and an opposing surface; a cathode current collector layer comprising one or more conducting lines adhering to the opposing surface of the cathode layer, the conducting lines having spacings therebetween or thereabout; an anode layer facing the opposing surface of the cathode layer and the cathode current collector layer; and an electrolyte layer between the cathode current collector layer, cathode layer and anode layer, the electrolyte layer at least partially extending through the spacings between or about the conducting lines of the cathode current collector layer to contact the opposing surface of the cathode layer" as recited in the claim as amended.

Instead, Cheu et al. discloses a battery package for a flat cell battery having a metal terminal 60 on one side of a cathode layer 50, a cathode current collector 70 in contact with the other side of cathode layer 50, and an electrolyte 40 between the cathode layer and an anode layer. However, Cheu et al. does not teach a substrate comprising a dielectric material upon which the cathode layer adheres. The cathode current collector of Cheu et al., the substrate in the Examiner's rejection, is a metal. The flat cell battery of Cheu et al. requires a metal substrate to act as a current collector. In comparison, however, the thin film battery of Claim 20 does not require a conductive substrate acting as a current collector. Furthermore, Cheu et al. does not teach a thin film battery in which the comprising layers adhere to each other, for example the cathode adhering to the substrate and the cathode current collector adhering to the cathode, etc. Instead, Cheu et al. teaches a flat cell battery which is a mechanical assembly in which the cathode current collector 70, cathode 50 and metal terminal 60 are kept in contact with each other with the application of a compressive force, such as through spring element 100 in Figure 4. The presence of a spring element to apply a compressive force would be detrimental to the energy density of a thin film battery. Thus, Cheu et al. does not teach each and every element of Claim 20, and therefore Cheu et al. does not anticipate Claim 20 as amended, or the claims dependent therefrom.

Claim 26

The Examiner has indicated in the Allowable Subject Matter section of the Office Action that Claim 28, which is dependent on Claim 26, would be allowable over the

cited references if rewritten in independent form. The limitations of Claim 28 have been incorporated into Claim 26, thus it is believed that Claim 26, and those claims dependent therefrom, should now be allowable, obviating the rejection under 35 USC 102(b) over Cheu et al.

**Rejection of Claims 26 and 27 under 35 USC 102(b)**

The Examiner rejected Claims 26 and 27 under 35 USC 102(b) as being anticipated by U.S. Patent No. 3,969,142 to Greatbatch et al.

Claim 26

The Examiner has indicated in the Allowable Subject Matter section of the Office Action that Claim 28, which is dependent on Claim 26, would be allowable over the cited references if rewritten in independent form. The limitations of Claim 28 have been incorporated into Claim 26, thus it is believed that Claim 26, and those claims dependent therefrom, should now be allowable, obviating the rejection under 35 USC 102(b) over Greatbatch et al.

**Rejection of Claims 23 under 35 USC 103(a)**

The Examiner rejected Claims 23 under 35 USC 103(a) as being unpatentable over Cheu et al. in view of U.S. Patent No. 4,565,753 to Goebel et al.

Claim 20

Cheu et al. does not teach the thin film battery of Claim 20 for the reasons given above.

Goebel et al. does not make up for the deficiencies of Cheu et al. Instead, Goebel et al. discloses an electrochemical cell with electrode structures wound in a coil. Goebel discloses a cathode structure including a metal substrate covered on both sides with a porous catalytic material. Goebel et al. does not teach a cathode current collector layer comprising one or more conducting lines on the opposing surface of a cathode.

Instead, the metal substrate of the cathode structure of Goebel et al. is embedded in the center of the cathode structure, covered on both sides with a porous catalytic material. Goebel et al. also does not teach a thin film battery in which the comprising layers adhere to each other. The electrochemical cell of Goebel et al. is a mechanical assembly which is maintained in a coil by a cylindrical wall of a hollow metal case. Furthermore, Goebel et al. does not teach an electrolyte layer, but rather an electrolyte solution in which the coiled electrode structures are immersed. The electrolyte layer of Claim 20 is advantageous in comparison to an electrolyte solution because it does not require containment within a casing and can be more easily manipulated into a variety of shapes and spatial configurations. Thus, Claim 20 as amended, and those claims dependent therefrom, are patentable over Goebel et al.

Furthermore, there is no motivation or suggestion to combine these references or to arrive at the limitations of Claim 20 not taught by either. Both Cheu et al. and Goebel et al. teach battery assemblies in which a compressing element or assembly casing is required to keep the battery components in contact with each other. There is no suggestion or motivation for adhering layers. Furthermore, neither reference teaches, suggests, or provides motivation for a cathode current collector on the opposing side of the cathode without a conductive current collecting substrate. Thus, Claim 20, and those claims dependent therefrom, are patentable over Cheu et al in view of Goebel et al.

**Rejection of Claims 24 and 29 under 35 USC 103(a)**

The Examiner rejected Claims 24 and 29 under 35 USC 103(a) as being unpatentable over Cheu et al. in view of U.S. Patent No. 3,844,841 to Baker.

Claim 20

Cheu et al. does not teach the thin film battery of Claim 20 for the reasons given above.

Baker does not make up for the deficiencies of Cheu et al. Instead, Baker discloses a modular battery comprising a plurality of battery cells. Each battery cell

comprises positive and negative electrodes with an intermediate electrolyte layer, the electrodes and electrolyte sandwiched between outer terminal conductor foils. Baker does not teach a cathode current collector comprising one or more conducting lines adhering to the opposing surface of the cathode. Instead, Baker discloses an electrolyte layer contacting the cathode without an intervening cathode current collector. Furthermore, Baker does not teach a thin film battery in which the comprising layers adhere to each other. Instead, Baker discloses a battery assembly in which the comprising components such as the electrodes and electrolyte are held together by a casing. The battery assembly comprises some elaborate machinations, such as a pressure sensitive probe to monitor gas pressures in the assembly, and o-rings to seal the assembly, not required by the ahering layers of the thin film battery of Claim 20. Thus, Claim 20 as amended, and those claims dependent therefrom, are patentable over Baker.

Furthermore, there is no motivation or suggestion to combine these references or to arrive at the limitations of Claim 26 not taught by either. Both Cheu et al. and Baker teach battery assemblies in which a compressing element or assembly casing is required to keep the battery components in contact with each other. There is no suggestion or motivation for adhering layers. Furthermore, neither reference teaches, suggests, or provides motivation for a cathode current collector on the opposing side of the cathode without a conductive current collecting substrate. Thus, Claim 26, and those claims dependent therefrom, are patentable over Cheu et al in view of Baker.

Claim 26

The Examiner has indicated in the Allowable Subject Matter section of the Office Action that Claim 28, which is dependent on Claim 26, would be allowable over the cited references if rewritten in independent form. The limitations of Claim 28 have been incorporated into Claim 26, thus it is believed that Claim 26, and those claims dependent therefrom, should now be allowable, obviating the rejection under 35 USC 103(a) over Cheu et al. in view of Baker.

**Rejection of Claims 25 and 30 under 35 USC 103(a)**

The Examiner rejected Claims 25 and 30 under 35 USC 103(a) as being unpatentable over Cheu et al. in view of U.S. Patent No. 5,612,152 to Bates.

Claim 20

Cheu et al. does not teach the thin film battery of Claim 20 for the reasons given above.

Bates does not make up for the deficiencies of Cheu et al. Instead, Bates discloses a thin film battery cell comprising an anode film, cathode film, and an electrolyte material between the two. Bates discloses cathode and anode current collectors on the surfaces of the cathode and anode films not contacting the electrolyte material. Thus, Bates does not teach a cathode current collector on the opposing surface of the cathode, that is, the surface of the cathode contacting the electrolyte. Furthermore, Bates does not teach a cathode current collector comprising one or more conducting lines with an electrolyte at least partially extending through spacings between or about the conducting lines. Instead, the electrolyte of Bates is not about or around or in contact with the cathode current collector. Thus, the thin film battery of Claim 20 is patentable over Bates.

Furthermore, there is no motivation or suggestion to combine these references or to arrive at the limitations of Claim 20 not taught by either. Neither reference teaches, suggests, or provides motivation for a cathode current collector on the opposing side of the cathode without a conductive current collecting substrate. Thus, Claim 20, and those claims dependent therefrom, are patentable over Cheu et al in view of Bates.

Claim 26

The Examiner has indicated in the Allowable Subject Matter section of the Office Action that Claim 28, which is dependent on Claim 26, would be allowable over the cited references if rewritten in independent form. The limitations of Claim 28 have been incorporated into Claim 26, thus it is believed that Claim 26, and those claims dependent

therefrom, should now be allowable, obviating the rejection under 35 USC 103(a) over Cheu et al. in view of Bates.

**Rejection of Claims 29 under 35 USC 103(a)**

The Examiner rejected Claims 25 and 30 under 35 USC 103(a) as being unpatentable over Greatbatch et al. in view of U.S. Patent No. 4,309,494 to Stockel.

Claim 26

The Examiner has indicated in the Allowable Subject Matter section of the Office Action that Claim 28, which is dependent on Claim 26, would be allowable over the cited references if rewritten in independent form. The limitations of Claim 28 have been incorporated into Claim 26, thus it is believed that Claim 26, and those claims dependent therefrom, should now be allowable, obviating the rejection under 35 USC 103(a) over Greatbatch et al. in view of Stockel.

**New Claims**

New Claims 31-55 are believed to be allowable because none of the cited references teaches, suggests, or provides motivation for all of their limitations. For example, Claims 31 and 36 recite, inter alia, a cathode current collector contacting the cathode, the cathode current collector comprising conducting lines having a plurality of elongated prongs extending outwardly from a base prong, and an electrolyte extending at least partially through spacings between the elongated prongs. Claim 38 recites, inter alia, a cathode current collector on the opposing surface of a cathode, the cathode current collector comprising a pattern of conductors having a plurality of shapes, the plurality of shaped comprising one or more different shapes, with an electrolyte extending at least partially between the spacing between the shapes in the pattern. Claim 43 recites, inter alia, a cathode current collector on the opposing surface of a cathode, the cathode current collector comprising a layer having spacings therein, with an electrolyte at least partially extending into the spacings in the cathode current collector layer. Claim 49 recites, inter alia, a cathode current collector on the opposing surface of the cathode, the cathode

current collector comprising a single continuous conducting line comprising portions with spacings therebetween, with an electrolyte at least partially extending through the spacings between the portions of the conducting line. The limitations of new independent claims 31, 36, 38, 43 and 49 are not taught or suggested by the cited art, and thus these Claims and those claims dependent therefrom, should be allowable.

Furthermore, it is believed that these new claims should be allowable for the same reasons given by the Examiner in the Allowable Subject Matter section of the Office Action mailed on November 24, 2003.

## CONCLUSION

The pending and added claims are allowable at least for the reasons given above. The Examiner is respectfully requested to reconsider the present rejections and allow the pending claims. Should the Examiner have any questions, the Examiner is respectfully requested to telephone Applicant's representative at the number listed below.

Respectfully submitted,
**JANAH & ASSOCIATES, P.C.**

Dated: March 24, 2004

By: _____
Ashok K. Janah
Reg. No. 37,487

Please direct calls to: Ashok K. Janah (415) 538-1555.

Please continue to send correspondence to:

**Janah & Associates, P.C.**
650 Delancey Street, Suite 106
San Francisco, CA 94107-2001